Claims

What is Claimed is:

1.   An apparatus, comprising;

an allocation arrangement receiving equipment status data, the allocation arrangement

including a manual input and an automatic input for receiving the equipment status data, wherein

the equipment status data includes operation mode data;

a card reader obtaining employee data from an employee identification;

a part counter receiving sensor data;

an interactive screen displaying messages; and

a processing device receiving one of the employee data, the sensor data, the equipment

status data and the operation mode data, wherein the processing device processes the one of the

received data for transmission to an information collection device.

2.   The apparatus according to claim 1, wherein the processing device transmits the one of

the received information via one of a wireless modem and a cable modem.

3.   The apparatus according to claim 1, wherein the processing device receives message

signals from a control station, the message signals corresponding to the messages, the processing

device providing the message signals to the interactive screen.

4.   The apparatus according to claim 1, further comprising:

a respond switch generating a positive response signal to the messages displayed on the

interactive screen.

5. The apparatus according to claim 1, wherein the equipment status data further includes one of a real time operating status and a down time indicator.

6. The apparatus according to claim 1, wherein the processing device is a programmable logic controller.

7. The apparatus according to claim 1, wherein the operation mode data includes one of a run mode and an off mode.

8. A system, comprising:

a plurality of slave devices collecting real time data from process stations;

a master device receiving the collected data from the plurality of slave devices, wherein the master device polls the plurality of slave devices in a predetermined order; and

an analysis device processing the collected data and producing output data as a function of the collected data.

9. The system according to claim 8, wherein each of the plurality of slave devices is a programmable logic controller.

10.   The system according to claim 8, wherein the master device is a programmable logic controller.

11.   The system according to claim 8, wherein the master device initiates the polling of the slave devices by communicating with each of the slave devices in the predetermined order during a request period.

12.   The system according to claim 11, wherein each of the slave devices communicates the collected data to the master device during a response period corresponding to the request period for each of the slave devices.

13.   The system according to claim 12, wherein each of the slave devices communicates the collected data to the master device a plurality of times during the response period.

14.   The system according to claim 12, wherein, after a first response period for one of the plurality of slave devices, the one of the plurality of slave devices purges previously collected data from memory and stores data collected after the first response period.

15.   The system according to claim 8, wherein each of the slave devices includes a radio modem communicating the collected data from the slave devices to the master device.

16. The system according to claim 8, wherein each of the collected data receives a time stamp when it is collected by each of the plurality of slave devices, the time stamp indicating a time when each of the collected data is received by the plurality of slave devices.

17. The system according to claim 15, wherein the master device receives the collected data with the time stamp and the analysis device produces the output data including the time when each of the collected data was received by the plurality of slave devices.

18. A method, comprising the steps of:

collecting real time material information from a production line;

analyzing the real time material information to determine a material cost;

collecting real time operator information from the production line;

analyzing the real time operator information to determine an operator cost;

collecting real time equipment information from the production line;

analyzing the real time equipment information to determine an equipment cost;

collecting real time indirect cost information from the production line;

analyzing the real time indirect cost information to determine an indirect cost;

determining an actual production cost as a function of the material cost, the operator cost, the equipment cost and the indirect cost; and

generating cost comparison data as a function of the actual production cost and a scheduled production cost.

19.   The method of claim 18, further comprising the steps of:

determining an actual operation efficiency as a function of the actual production cost and the real time equipment cost; and

generating efficiency comparison data as a function of the actual operation efficiency and a scheduled efficiency.

20.   The method of claim 18, wherein the analyzing of the real time material information step includes a comparison of the real time material information with stored material information.

21.   The method of claim 18, wherein the analyzing of the real time operator information step includes a comparison of the real time operator information with stored operator information.

22.   The method of claim 18, wherein the analyzing of the real time equipment information step includes a comparison of the real time equipment information with stored equipment information.

23.   The method of claim 18, wherein the combining step includes a comparison of the real time information with stored part information.

24.   The method of claim 18, wherein the real time equipment information includes equipment failure data, and further comprising the steps of:

transmitting the equipment failure data to a maintenance post;

determining a response time for maintenance personnel to respond to the equipment failure data as a function of the transmitted equipment failure data and a repair time entered by the maintenance personnel in response to the equipment failure data.

25. A method, comprising the steps of:

collecting real time production information via a data collection unit, the unit including a card reader, a part counter, a mode switch and a processing device;

transmitting the real time production information to a master device;

further transmitting the real time production information from the master device to a control station; and

processing the real time production information at the control station to generate automated tracking data.

26. The method of claim 25, wherein the processing step includes the comparison of the real time production information with stored production information.

27. The method of claim 25, wherein the transmitting of the real time production information from the data collection unit to the master device utilizes a wireless modem.

28. The method of claim 25, wherein the real time production information includes one of material information, operator information and equipment information.

29.   The method of claim 25, further comprising the step of:

transmitting the automated tracking data to a maintenance station, wherein the automated

tracking data includes maintenance data.

30.   The method of claim 25, wherein the automated tracking data includes one of

unproductive time data and share of blame data, and further comprising the step of:

displaying the one of unproductive time data and share of blame data for a predetermined

time span.

31.   A method, comprising the steps of:

collecting real time production information from a plurality of slave devices;

polling the slave devices in a predetermined order by a master device, wherein the master

device initiates the polling of the slave devices by communicating with each of the slave devices

in the predetermined order during a request period;

transmitting the real time production information by each of the slave devices to the

master device during a response period corresponding to the request period for each of the slave

devices; and

processing the real time production information to generate automated tracking data.

32.   The method of claim 31 wherein the transmitting step includes transmitting the real time

production information by each of the slave devices a plurality of transmissions during the

response period and the analyzing step produces the automated tracking data from one of the plurality of transmissions.

33.   The method of claim 32, further comprising the step of:

determining, by the master device, the one of the plurality of transmissions to be analyzed.